

**WE CLAIM:**

1. A method for recording call failure information in a data transmission system, comprising:
  - generating a first failure log in response to a failure event, said first failure log including a failure type and a first timestamp and placing said first failure log in a queue;
  - formulating an identifier for said first failure log based on said failure type;
  - and
  - creating a log record for said first failure log and storing said log record in a log record storage.
2. The method of claim 1, wherein said log record comprises a timestamp field for storing said first timestamp and a count field for storing a count indication the number of log records generated by said failure event.
3. The method of claim 1, further comprising:
  - generating a further failure log in response to said failure event, said further failure log including said failure type and a current timestamp;
  - formulating said identifier for said further failure log based on said failure type; and
  - updating said log record in said log record storage to document said current timestamp.
4. The method of claim 3, further comprising incrementing said count by one to indicate the current number of failure logs with said identifier that have updated said log record.
5. The method of claim 1, wherein said step of formulating an identifier comprises processing selected fields in said failure log.

6. The method of claim 5, wherein, for an active call, said selected fields include a standard failure reason field and a failure point field.

7. The method of claim 5, wherein, for call attempt, said selected fields include a standard failure reason field and a calling party identification field and a called party identification field.

8. The method of claim 5, wherein said selected fields further include a proprietary failure reason field.

9. The method of claim 1, wherein said step of formulating an identifier comprises applying a CRC-type checksum function over selected fields in said failure log.

10. The method of claim 2, further comprising using said count indication to complement the call failure statistics collected over said network.

11. The method of claim 5, wherein said step of formulating an identifier comprises:

selecting  $n$  fields in said failure log; and

selecting a function that provides a unique result when applied to a data configuration and applying a function to the data comprised in said  $n$  fields.

12. The method of claim 11, wherein said function is a CRC-type checksum function.

13. The method of claim 11, further comprising selecting said fields with a configurable filter.

14. The method of claim 5, wherein said step of formulating an identifier comprises:

selecting  $n$  fields in said failure log, according to said failure type;  
selecting a plurality of functions, a function for each said failure type, each function providing a unique result when applied to a data configuration; and  
applying to the data comprised in said  $n$  fields a function corresponding to the failure type in said failure log.

15. A device for recording call failure information in a data transmission system, comprising:

means for generating a failure log in response to a failure event, said failure log including a time stamp;  
a log queue for temporarily receiving said failure log;  
means for formulating an identifier for said failure log based on a failure type of the event that generated said failure log;  
means for creating a log record for said failure log, which includes said identifier, and  
a log record storage for storing said log record.

16. The device of claim 15, further comprising means for updating said log record in said log record storage.

17. The device of claim 16, wherein said means for formulating comprises:

a log type block for providing a failure type indicating the type of event that generated said failure log;  
a filter for selecting a number of fields in said failure log; and  
a formulation function unit for receiving said failure log, applying said formulation function to the data comprised in said fields, and providing a log ID unique for said failure type.

18. The device of claim 17, wherein said filter is configurable.

19. The device of claim 15, wherein said means for formulating comprises:

- a log type block for providing a failure type indicating the type of event that generated said failure log;

- a plurality of formulation function units, a unit for each said failure type, each unit for creating a log record with a unique identification;

- a separator for receiving said failure log and directing same to a formulation function unit corresponding to said failure type; and

- a combiner for directing said log record from the output of each said formulation function unit to said log record storage.